REMARKS

Claims 1-20 are in the case and claims 7-20 have been withdrawn from consideration. Claims 1-2, 4, and 6 are rejected under 35 USC § 102 over different ones of USPN 5,670,280 to Lawandy, USPN 5,939,227 to Smith, and USPN 6,436,588 to Mason et al. Claims 3 and 5 are rejected under 35 USC § 103 over Mason et al. in view of USPN 5,592,325 to Dodge et al. The rejections are respectfully traversed. Reconsideration and allowance of the claims are respectfully requested.

CLAIM REJECTIONS UNDER §102

Claims 1-2 and 6 are rejected under 35 U.S.C. 102 as being unpatentable over Lawandy, Smith, and Mason et al., individually. Claim 4 is rejected under 35 U.S.C. 102 as being unpatentable over Smith. Independent claim 1 claims, *inter alia*, a phase shift mask including ***a mask substrate that is substantially transparent to the incident light beam***, and ***a first phase shift layer having a refractive index that is nonlinear with the intensity of the incident light beam***, wherein the refractive index of the first phase shift layer changes with the intensity of the incident light beam on the phase shift mask. None of Lawandy, Smith, and Mason et al. describe such a phase shift mask.

Lawandy describes a phase shift mask where ***the mask substrate has an intensity dependent nonlinearity***, such as refractive index. However, the mask as claimed in claim 1 does not use an intensity dependent substrate. Rather, as recited above, the mask of claim 1 uses ***a substantially transparent substrate***, and a layer on the substrate that has a refractive index that is nonlinear with the intensity of the light. This very different structure provides very different benefits in the mask as claimed. For example, the mask of Lawandy cannot have different regions where the nonlinearity of the mask is exploited, because the nonlinearity is found across the entire substrate. However, the nonlinear layer of the mask as claimed can be removed as desired from various parts of the mask, thus advantageously using the nonlinearity in different areas of the mask.

Smith describes a phase shift mask where the refractive index of the mask is nonlinear with the ***wavelength*** of the light. However, in the mask as claimed in claim 1,

the nonlinear refractive index is nonlinear with the ***intensity*** of the light, not the wavelength.

Mason et al. describe a phase shift mask where ***the refractive index is controlled by a modulation system 18***, and not by the light source 20. However, in the mask as claimed in claim 1, ***the refractive index is controlled by the intensity of the light.*** Mason et al. do not make any description of such light-intensity control of refractive index. Further, Mason et al. do not describe that the refractive index is nonlinear with their modulation system 18. In the mask as claimed in claim 1, the refractive index is nonlinear with the intensity of the light.

Thus, claim 1 patentably defines over Lawandy, Smith, and Mason et al. Reconsideration and allowance of claim 1 are respectfully requested. Dependent claims 2, 4, and 6 depend from independent claim 1, and contain additional important aspects of the invention. Therefore, dependent claims 2 and 6 patentably define over Lawandy, Smith, and Mason et al., and dependent claim 4 patentably defines over Smith. Reconsideration and allowance of dependent claims 2, 4, and 6 are respectfully requested.

CLAIM REJECTIONS UNDER §103

Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mason et al. in view of Dodge et al. Dependent claims 3 and 5 depend from independent claim 1, which claims *inter alia*, a phase shift mask including a mask substrate that is substantially transparent to the incident light beam, and a first phase shift layer having a refractive index that is nonlinear with the intensity of the incident light beam, wherein the refractive index of the first phase shift layer changes with the intensity of the incident light beam on the phase shift mask. The combination of Mason et al. and Dodge et al. do not describe such a phase shift mask.

The deficiencies of Mason et al. in regard to this combination of limitations are described at length above. Dodge et al. do not compensate for the deficiencies of Mason et al., in that Dodge et al. do not describe the use of a layer having a refractive index that is nonlinear with the intensity of the incident light beam. Rather, Dodge et al. describe that KTP is a nonlinear ***frequency*** converting compound. Further, there is no discussion

in Dodge et al. of modifying a refractive index of KTP or any other material by adjusting the intensity of the incident light. Thus, there is no incentive to modify the mask of Mason et al. in any way to produce the mask of the present invention as claimed. This is described in more detail in the next section.

Thus, claims 3 and 5 patentably define over Mason et al. in view of Dodge et al. Reconsideration and allowance of claims 3 and 5 are respectfully requested.

COMBINATION OF REFERENCES

Furthermore, it is respectfully submitted that the references cited do not support combining the elements as claimed in the present invention. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d (BNA) 1566 (Fed. Cir. 1990) states that the PTO erred in rejecting a claimed invention as an obvious combination of the teaching of prior art references when the prior art provided no teaching, suggestion, or incentive supporting the combination. *See Northern Telecom Inc. v. Datapoint Corp.*, 15 U.S.P.Q.2d 1321, 1323, *In re Geiger*, 2 U.S.P.Q.2D 1276, 1278. *SmithKline Diagnostics, Inc. v. Helena Laboratories Corp.*, 859 F.2d 878, 887, 8 U.S.P.Q.2d (BNA) 1468, 1475 (Fed. Cir.1988) states that one "cannot pick and choose among the individual elements of assorted prior art references to recreate the claimed invention."

There is nothing in the prior art cited to lead a person of ordinary skill to design an apparatus like that of the present invention, other than the hindsight knowledge of this invention. The office action recites certain generalized benefits (realized in hindsight after considering the invention) as motivation for the combination of the references. However, these generalized motivations do not make obvious the combination of the references to produce the claimed invention.

This does not satisfy Section 103. The motivation to combine references cannot come from the invention itself. *See In re Oetiker*, 24 U.S.P.Q.2D 1443, 1446. The claims of the present application appear to have been used as a frame, and individual parts of separate prior art references were employed to recreate a facsimile of the claimed invention. *See W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 220 U.S.P.Q. 303, 312. There is no explanation of what there was in the prior art that would have caused those skilled in the art to combine the references.

The examiner has the burden to show some teaching or suggestion in the references to support their use in the particular claimed combination. *Uniroyal Inc. v. Rudkin-Wiley Corp.*, 5 U.S.P.Q.2D at 1438-1439. In the absence of such, applicants respectfully suggest that the references are improperly combined.

CONCLUSION

Applicants assert that the claims of the present application patentably define over the prior art made of record and not relied upon for the same reasons as given above. Applicants respectfully submit that a full and complete response to the office action is provided herein, and that the application is now fully in condition for allowance. Action in accordance therewith is respectfully requested.

In the event this response is not timely filed, applicants hereby petition for the appropriate extension of time and request that the fee for the extension be charged to deposit account 12-2355. If other fees are required by this amendment, such as fees for additional claims, such fees may be charged to deposit account 12-2252. Should the examiner require further clarification of the invention, it is requested that he contact the undersigned before issuing the next office action.

Sincerely,

LUEDEKA, NEELY & GRAHAM, P.C.

By: 

Rick Barnes, 39,596

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